



SEQUENCE LISTING

Zhang, Jingwu Z.
Ho, Walter Kowk Keung
Zhang, Dongqing
Sun, Wei

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<120> T Cell Receptor CDR3 Sequence and Methods for Detecting and Treating Rheumatoid Arthritis

<130> D6622

<140> US 10/612,468

<141> 2003-07-02

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<223> part of the complementary determining region-3 (CDR3) in the V(16 family (BV16 gene) of T cell receptors (TCR) in patients with rheumatoid arthritis (RA)

<400> 1
agccaagctg acgggaccca t 21

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<223> part of the complementary determining region-3 (CDR3) in the V(14 family (BV14 gene) of TCR in patients with RA

<400> 2
agtccgggg gcagtctgtt c 21

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<212> PRT
<213> Homo sapiens

<220>
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<223> conserved amino acid sequence derived from CDR3 of TCR beta-chain BV16 in patients with RA

<400> 3
Ser Gln Ala Asp Gly Thr His
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<210> 4
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<400> 5
Ser Trp Gly Gly

<210> 6
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region V(14 of T cell receptors

<400> 6

Met Gly Pro Gln Leu Leu Gly Tyr Val Val Leu Cys Leu Leu Gly
5 10 15
Ala Gly Pro Leu Glu Ala Gln Val Thr Gln Asn Pro Arg Tyr Leu
20 25 30
Ile Thr Val Thr Gly Lys Lys Leu Thr Val Thr Cys Ser Gln Asn
35 40 45
Met Asn His Glu Tyr Met Ser Trp Tyr Arg Gln Asp Pro Gly Leu
50 55 60
Gly Leu Arg Gln Ile Tyr Tyr Ser Met Asn Val Glu Val Thr Asp
65 70 75
Lys Gly Asp Val Pro Glu Gly Tyr Lys Val Ser Arg Lys Glu Lys
80 85 90
Arg Asn Phe Pro Leu Ile Leu Glu Ser Pro Ser Pro Asn Gln Thr
95 100 105
Ser Leu Tyr Phe Cys Ala Ser Ser
110

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Ile Glu Ala Gly Val Thr Gln Phe Pro Ser His Ser Val Ile Glu
5 10 15
Lys Gly Gln Thr Val Thr Leu Arg Cys Asp Pro Ile Ser Gly His
20 25 30
Asp Asn Leu Tyr Trp Tyr Arg Arg Val Met Gly Lys Glu Ile Lys
35 40 45
Phe Leu Leu His Phe Val Lys Glu Ser Lys Gln Asp Glu Ser Gly
50 55 60
Met Pro Asn Asn Arg Phe Leu Ala Glu Arg Thr Gly Gly Thr Tyr
65 70 75
Ser Thr Leu Lys Val Gln Pro Ala Glu Leu Glu Asp Ser Gly Val
80 85 90
Tyr Phe Cys Ala Ser Ser
95

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<210> 9
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<400> 9
tagttcagag tgcaagtca g 21

<210> 10
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<400> 10
ggtttatctgt aagagtggaa cct 23

<210> 11
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<400> 12
tcgagatatac tagtcaaaag gacg 24

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ggtgctggcg gactccagaa t 21

<210> 14
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<210> 17

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<220>

<221> primer_bind

<223> reverse primer specific for TCR BV5 used in real-time PCR analysis

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<210> 18

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<210> 21
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<210> 22
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gagtccctgg gttctgaggg c 21

<210> 24
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<220>
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ccaaaataacc tggtcacaca g 21

<210> 25
<211> 22
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<220>
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<400> 25
ccagggaatt gatgtgaaga tt 22

<210> 26
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<220>
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<400> 26
acctagactt ctggtaaaag ca 22

<210> 27
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<220>
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<400> 27
ggactggatc tccaaaggta c 21

<210> 28
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<220>
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<223> forward primer specific for TCR BV11 used in real-time PCR analysis

<400> 28
ttatagggac aggaaagaag atc 23

<210> 29
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PCR analysis

<400> 29
atgtgagggc ctggcagact c 21

<210> 30
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<220>
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<223> forward primer specific for TCR BV12 used in real-time PCR analysis

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caagacacaa gatcacagag aca 23

<210> 31
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<220>
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<400> 31
ggcagcagac tccagagtga g 21

<210> 32
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<400> 32
tgaagacagg acagagcatg aca 23

<210> 33
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<210> 35

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<400> 35
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<210> 36

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<223> forward primer specific for TCR BV15 used in real-time PCR analysis

<400> 36

tcacaaagac aggaaagagg att

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<210> 37

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<212> DNA

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<223> reverse primer specific for TCR BV15 used in real-time PCR analysis

<400> 37

ggggatggca gactctaggg a

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<210> 38

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<212> DNA

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<223> forward primer specific for TCR BV16 used in real-time PCR analysis

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gttcccccagc cacagcgtaa ta

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<210> 39

<211> 21

<212> DNA

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<223> reverse primer specific for TCR BV16 used in real-time PCR analysis

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cagttctgca ggctgcacct t

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<210> 40

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<210> 42
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<210> 43
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<400> 43
tgccgaatct cctcgacta c 21

<210> 44

<211> 24
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ccaggacatt tggtcaaagg aaaa 24

<210> 45
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<400> 45
cagtgcgtg tctcccggtt c 21

<210> 46
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<210> 47
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<210> 48
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cccagatata agattacaga gaaa 24

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<210> 50
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cacagatggg acaggaagtg atc 23

<210> 51
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<220>
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<400> 51
gtcctccagc tttgtggacc g 21

<210> 52
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<220>
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<400> 52
aagagggaaa cagccactct g 21

<210> 53
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<220>
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<210> 54
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<220>
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<223> forward primer specific for TCR BV24 used in real-time PCR analysis

<400> 54
ccaagatacc agtttaccca gttt 24

<210> 55
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<220>
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<210> 56
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<220>
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<400> 56
aaaacatctt gtcagagggg aa 22

<210> 57
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<212> DNA
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<220>
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<400> 57
tgaatcctca agttcgtag c 21

<210> 58
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<223>	forward primer specific for TCR BC used in real-time PCR	
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<223>	reverse primer specific for TCR BC used in real-time PCR	
	analysis	
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<223>	BC primer used for run-off reactions	
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<221>	primer_bind	
<223>	FAM (expand)-labeled BC primer used for run-off reactions	
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	cacagcgacc tcgggtggg	19

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<400> 62
actgtgagtc tggtgccttg t 21

<210> 63
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 63
acaacggta acttggtccc cgaa 24

<210> 64
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
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<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 64
ggtcctctac aacagtgagc caac 24

<210> 65
<211> 24
<212> DNA
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<220>
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<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 65
aagagagaga gctgggttcc actg 24

<210> 66
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<221> primer_bind
<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 66
ggagagtgcga gttccatca 19

<210> 67
<211> 24
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<220>
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<400> 67
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<210> 68
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<210> 69
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<212> DNA
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gtccctccagt acgctcagcc taga 24

<210> 70
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<210> 71
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<210> 72
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<400> 72
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<210> 73
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<220>
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<223> FAM (expand)-labeled BJ primer used for run-off reactions

<400> 73
ctgctgccgg cccccgaaagt c 21

<210> 74
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<220>
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<400> 74
tgaccgtgag cctggtgccc g 21

<210> 75
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<212> PRT
<213> Homo sapiens

<220>
<221> Domain
<223> CDR3 amino acid sequence of BV16 clonotype derived from ST specimen of RA patients

<400> 75
Tyr Phe Cys Ala Ser Ser Gln Asp Ser Gly Gly Gly Gly Glu Gln
5 10 15
Phe Phe Gly Pro Gly
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<210> 76
<211> 60

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cgggcagga 60

<210> 77
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<400> 77
Tyr Phe Cys Ala Ser Ser Arg Leu Gly Gln Gly Tyr Asn Glu Gln
5 10 15
Phe Phe Gly Pro Gly
20

<210> 78
<211> 60
<212> DNA
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<220>
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<223> CDR3 nucleic acid sequence of BV16 clonotype derived from ST specimen of RA patients

<400> 78
tatttctgtg ccagcagccg actggacacag ggctacaatg agcagttctt 50
cgggcagga 60

<210> 79
<211> 20
<212> PRT
<213> HOMO sapiens

<220>
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<223> CDR3 amino acid sequence of BV16 clonotype derived from ST specimen of RA patient

<400> 79
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5 10 15
Phe Phe Gly Pro Gly
20

<210> 80
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<220>
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<223> CDR3 nucleic acid sequence of BV16 clonotype derived from ST specimen of RA patients

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tatttctgtg ccagcagcca agatctggac agctacaaatg agcagttctt 50
cgggccagga 60

<210> 81
<211> 20
<212> PRT
<213> Homo sapiens

<220>
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<223> CDR3 amino acid sequence of BV16 clonotype derived from ST specimen of RA patient

<400> 81
Tyr Phe Cys Ala Ser Ser Gln Gly Thr Ser Gly Ile Thr Glu Gln
5 10 15
Phe Phe Gly Pro Gly
20

<210> 82
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
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 <223> CDR3 nucleic acid sequence of BV16 clonotype derived
 from ST specimen of RA patients

<400> 82
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 cgggccagga 60

<210> 83
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
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 <223> CDR3 amino acid sequence of BV16 clonotype derived
 from ST specimen of RA patient

<400> 83
 Tyr Phe Cys Ala Ser Ser Gln Leu Ala Gly Pro Tyr Asn Glu Gln
 5 10 15
 Phe Phe Gly Pro Gly
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<210> 84
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<220>
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 from ST specimen of RA patients

<400> 84
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 cgggccagga 60

<210> 85
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
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from ST specimen of RA patient

<400> 85
Tyr Phe Cys Ala Ser Ser Leu Leu Gly Thr Val Ser Tyr Glu Gln
5 10 15
Phe Phe Gly Pro Gly
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<210> 86
<211> 60
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from ST specimen of RA patients

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cggggccaggc 60

<210> 87
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<213> Homo sapiens

<220>
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from ST specimen of RA patient

<400> 87
Tyr Phe Cys Ala Ser Pro Leu Gly Thr Ala Leu Ser Tyr Glu Gln
5 10 15
Phe Phe Gly Pro Gly
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<210> 88
<211> 60
<212> DNA
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from ST specimen of RA patients

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cgggcgggc

<210> 89
<211> 20
<212> PRT
<213> Homo sapiens

<220>
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Tyr Phe Cys Ala Ser Ser Gln Ala Asp Gly Thr His Tyr Glu Gln
5 10 15
Phe Phe Gly Pro Gly
20

<210> 90
<211> 60
<212> DNA
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cgggcgggc 60

<210> 91
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<212> PRT
<213> Homo sapiens

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<223> CDR3 amino acid sequence of BV16 clonotype derived from ST specimen of RA patient

<400> 91
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Phe Phe Gly Pro Gly
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<210> 92
<211> 60
<212> DNA
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<220>
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from ST specimen of RA patients

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cgggccgggc 60

<210> 93
<211> 20
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<220>
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from ST specimen of RA patient

<400> 93
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Phe Phe Gly Pro Gly
20

<210> 94
<211> 60
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from ST specimen of RA patients

<400> 94
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cgggcccgggc 60

<210> 95
<211> 20
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<220>
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<400> 95
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Phe Phe Gly Pro Gly
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<210> 96
<211> 60
<212> DNA
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<400> 96
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cgggcccgggc 60

<210> 97
<211> 20
<212> PRT
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<220>
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<400> 97
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Phe Phe Gly Pro Gly
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<210> 98
<211> 60
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<220>
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<400> 98
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cggggccgggc 60

<210> 99
<211> 18
<212> PRT
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<220>
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<400> 99
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5 10 15
Gly Gln Gly

<210> 100
<211> 54
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<210> 101
<211> 18

<212> PRT
<213> Homo sapiens

<220>
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<400> 101
Tyr Phe Cys Ala Ser Arg Ala Ser Arg Tyr Thr Glu Ala Phe Phe
5 10 15
Gly Gln Gly

<210> 102
<211> 54
<212> DNA
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<220>
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<400> 102
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<210> 103
<211> 18
<212> PRT
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<220>
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<400> 103
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5 10 15
Gly Gln Gly

<210> 104
<211> 54
<212> DNA
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<400> 104
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<210> 105
<211> 18
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<220>
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<400> 105
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5 10 15
Gly Gln Gly

<210> 106
<211> 54
<212> DNA
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<220>
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<400> 106
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<210> 107
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<220>
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<400> 107
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5 10 15
Gly Gln Gly

<210> 108
<211> 54
<212> DNA
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from ST specimen of RA patients

<400> 108
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<210> 109
<211> 18
<212> PRT
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<220>
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from ST specimen of RA patient

<400> 109
Tyr Phe Cys Ala Ser Ser Gln Asp Ser Tyr Thr Glu Ala Phe Phe
5 10 15
Gly Gln Gly

<210> 110
<211> 54
<212> DNA
<213> Artificial Sequence

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from ST specimen of RA patients

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<210> 111
<211> 18
<212> PRT
<213> Homo sapiens

<220>
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<400> 111
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5 10 15
Gly Gln Gly

<210> 112
<211> 54
<212> DNA
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<220>
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<400> 112
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<210> 113
<211> 20
<212> PRT
<213> Homo sapiens

<220>
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<400> 113
Tyr Phe Cys Ala Ser Ser Pro Thr Arg Asp Arg Gly Asn Glu Gln
5 10 15
Phe Phe Gly Pro Gly
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<210> 114
<211> 63
<212> DNA

<213> Artificial Sequence

<220>

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<223> CDR3 nucleic acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 114
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cttcgggcca gga 63

<210> 115

<211> 22

<212> PRT

<213> Homo sapiens

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 115
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5 10 15
Glu Gln Phe Phe Gly Pro Gly
20

<210> 116

<211> 63

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<223> CDR3 nucleic acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 116
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cttcgggcca gga 63

<210> 117

<211> 20

<212> PRT

<213> Homo sapiens

<220>
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<223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 117
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5 10 15
Phe Phe Gly Pro Gly
20

<210> 118
<211> 63
<212> DNA
<213> Artificial Sequence

<220>
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<400> 118
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cttcgggcca gga 63

<210> 119
<211> 21
<212> PRT
<213> Homo sapiens

<220>
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<400> 119
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5 10 15
Gln Phe Phe Gly Pro Gly
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<210> 120
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
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<400> 120
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cgggccagga
60

<210> 121
<211> 20
<212> PRT
<213> Homo sapiens

<220>
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<223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 121
Tyr Phe Cys Ala Ser Ser Pro Arg Glu Gly Leu Leu Asn Glu Gln
5 10 15
Phe Phe Gly Pro Gly
20

<210> 122
<211> 63
<212> DNA
<213> Artificial Sequence

<220>
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<400> 122
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cttcgggcca gga 63

<210> 123
<211> 21
<212> PRT
<213> Homo sapiens

<220>
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<400> 123
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5 10 15
Gln Phe Phe Gly Pro Gly
20

<210> 124
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
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<400> 124
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cgggcccagga. 60

<210> 125
<211> 19
<212> PRT
<213> Homo sapiens

<220>
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<223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 125
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5 10 15
Phe Gly Pro Gly

<210> 126
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
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<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 126
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<210> 127
<211> 20
<212> PRT
<213> Homo sapiens

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 127
Tyr Phe Cys Ala Ser Ser Leu Thr Ser Gly Arg Gln Tyr Glu Gln
5 10 15
Tyr Phe Gly Pro Gly
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<210> 128
<211> 60
<212> DNA
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<220>

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<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 128
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cgggccagga 60

<210> 129
<211> 20
<212> PRT
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<220>

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<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 129
Tyr Phe Cys Ala Ser Ser Ser Gly Gly Ser Leu Phe Tyr Glu Gln
5 10 15
Tyr Phe Gly Pro Gly
20

<210> 130
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
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<400> 130
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cgggccagga 60

<210> 131
<211> 20
<212> PRT
<213> Homo sapiens

<220>
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<223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 131
Tyr Phe Cys Ala Ser Ser Leu Ser Val Gly Ala Thr Tyr Glu Gln
5 10 15
Tyr Phe Gly Pro Gly
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<210> 132
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
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Tyr Phe Gly Pro Gly
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<210> 136

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

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<223> CDR3 nucleic acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 136

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cgggccagga 60

<210> 137

<211> 19

<212> PRT

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<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 137

Tyr Phe Cys Ala Ser Ser Arg Asp Gly Val Ser Tyr Glu Gln Tyr
5 10 15

Phe Gly Pro Gly

<210> 138

<211> 57

<212> DNA

<213> Artificial Sequence

<220>

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<223> CDR3 nucleic acid sequence of BV14 clonotype derived from ST specimen of RA patients

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<210> 139

<211> 19
<212> PRT
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<220>
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<400> 139
Tyr Phe Cys Ala Ser Ser Leu Ser Ser Thr Gly Arg Glu Gln Tyr
5 10 15
Phe Gly Pro Gly

<210> 140
<211> 57
<212> DNA
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<220>
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<400> 140
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<210> 141
<211> 20
<212> PRT
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<220>
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<400> 141
Tyr Phe Cys Ala Ser Ser Leu Ser Phe Arg Leu Asp Tyr Glu Gln
5 10 15
Tyr Phe Gly Pro Gly
20

<210> 142
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
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 <223> CDR3 nucleic acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 142
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 cgggccagga 60

<210> 143
 <211> 20
 <212> PRT
 <213> Homo sapiens

<220>
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 <223> CDR3 amino acid sequence of BV14 clonotype derived
 from ST specimen of RA patients

<400> 143
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 5 10 15
 Tyr Phe Gly Pro Gly
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<210> 144
 <211> 60
 <212> DNA
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 from ST specimen of RA patients

<400> 144
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 cgggccagga 60

<210> 145
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 <212> PRT
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<220>
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<223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 145

Tyr Phe Cys Ala Ser Ser Phe Gly Thr Val Leu Ser Tyr Glu Gln
5 10 15

Tyr Phe Gly Pro Gly
20

<210> 146

<211> 60

<212> DNA

<213> Artificial Sequence

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<223> CDR3 nucleic acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 146

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cgggccagga 60

<210> 147

<211> 20

<212> PRT

<213> Homo sapiens

<220>

<221> Domain

<223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 147

Tyr Phe Cys Ala Ser Ser Pro Arg Leu Ala Gly Asp Lys Glu Gln
5 10 15

Tyr Phe Gly Pro Gly
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<210> 148

<211> 61

<212> DNA

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<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 148
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tcgggccggg c 61

<210> 149
<211> 20
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<220>
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from ST specimen of RA patients

<400> 149
Tyr Phe Cys Ala Ser Ser Leu Ser Ala Arg Thr Thr Tyr Glu Gln
5 10 15
Tyr Phe Gly Pro Gly
20

<210> 150
<211> 60
<212> DNA
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<220>
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from ST specimen of RA patients

<400> 150
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cgggccagga 60

<210> 151
<211> 19
<212> PRT
<213> Homo sapiens

<220>
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<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 151
Tyr Phe Cys Ala Ser Ser Leu Ile Gly Gly Asn Glu Lys Leu Phe
5 10 15
Leu Gly Ser Gly

<210> 152
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
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<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 152
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<210> 153
<211> 18
<212> PRT
<213> Homo sapiens

<220>
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<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 153
Tyr Phe Cys Ala Ser Ser Leu Ser Gln Glu Thr Glu Ala Phe Phe
5 10 15
Gly Gln Gly

<210> 154
<211> 53
<212> DNA
<213> Artificial Sequence

<220>
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<223> CDR3 nucleic acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 154
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<210> 155

<211> 19
<212> PRT
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<220>
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<400> 155
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5 10 15
Phe Gly Ser Gly

<210> 156
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
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<400> 156
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<210> 157
<211> 18
<212> PRT
<213> Homo sapiens

<220>
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<223> CDR3 amino acid sequence of BV14 clonotype derived from ST specimen of RA patients

<400> 157
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5 10 15
Gly Gln Gly

<210> 158
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
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<400> 158
tacttctgtg ccagcagtct gtcacagaac actgaagctt tctttggaca aggc 54

<210> 159
<211> 18
<212> PRT
<213> Homo sapiens

<220>
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<400> 159
Tyr Phe Cys Ala Ser Ser Pro Arg Val Asn Thr Glu Ala Phe Phe
5 10 15
Gly Gln Gly

<210> 160
<211> 53
<212> DNA
<213> Artificial Sequence

<220>
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<400> 160
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<210> 161
<211> 18
<212> PRT
<213> Homo sapiens

<220>
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<400> 161

Tyr Phe Cys Ala Ser Ser Leu Ser Gln Glu Thr Glu Ala Phe Phe
5 10 15
Gly Gln Gly

<210> 162
<211> 53
<212> DNA
<213> Artificial Sequence

<220>
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from ST specimen of RA patients

<400> 162
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<210> 163
<211> 18
<212> PRT
<213> Homo sapiens

<220>
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<223> CDR3 amino acid sequence of BV14 clonotype derived
from ST specimen of RA patients

<400> 163
Tyr Phe Cys Ala Ser Ser Leu Gly Arg Asn Thr Glu Ala Phe Phe
5 10 15
Gly Gln Gly

<210> 164
<211> 54
<212> DNA
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<220>
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from ST specimen of RA patients

<400> 164
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<210> 165
<211> 18

<212> PRT
<213> Homo sapiens

<220>
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<400> 165
Tyr Phe Cys Ala Ser Ser Ser Arg Gly Tyr Thr Glu Ala Phe Phe
5 10 15
Gly Gln Gly

<210> 166
<211> 54
<212> DNA
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<220>
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<400> 166
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<210> 167
<211> 18
<212> PRT
<213> Homo sapiens

<220>
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<400> 167
Tyr Phe Cys Ala Ser Ser Ser Leu Ala Thr Ala Glu Ala Phe Phe
5 10 15
Gly Gln Gly

<210> 168
<211> 54
<212> DNA
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<221> CDS
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from ST specimen of RA patients

<400> 168
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